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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/508,771	03/16/2000	JINKO KIMURA	ASAMU0005	8406
24203 7590 08/09/2007 GRIFFIN & SZIPL, PC SUITE PH-1 2300 NINTH STREET, SOUTH ARLINGTON, VA 22204			EXAMINER WALKE, AMANDA C	
			ART UNIT 1752	PAPER NUMBER
			MAIL DATE 08/09/2007	DELIVERY MODE PAPER

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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 09/508,771
Filing Date: March 16, 2000
Appellant(s): KIMURA ET AL.

MAILED
AUG 09 2007
GROUP 1700

Joerg-Uwe Szipl
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 5/4/2007 appealing from the Office action mailed 3/13/2006.

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(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

4,360,582	TAGUCHI et al.	11-1982
5,198,484	MANNION	03-1993
4,710,446	HOFFMAN	12-1987
5,589,306	TAKAHASHI et al.	12-1996

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(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10, 13-19, 21-25, 28-38, and 44-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taguchi (4,360,582) in view of Mannion (5,198,484).

Taguchi teaches a photopolymerizable element comprising a layer of a photopolymerizable composition and a film support made of a transparent material. In order to produce a resist image on a substrate, the photopolymerizable layer is applied to a substrate, exposed imagewise to actinic radiation and developed to form an image (c. 3, 1. 20-46). The said element may further comprise a strippable protective film provided on the other surface of the photopolymerizable composition layer for preventing blocking at the winding step and adhesion of dust during handling (c. 3, 1. 62-68). Appropriate materials for the said protective film include polyethylene terephthalate, polypropylene film, polyethylene film, cellulose triacetate film, polyamide and polyethylene laminated paper (c. 10, 1. 15-23). Taguchi teaches that the thinner the photopolymerizable layer, the more the resolution is improved (c. 9, 1. 17-19). Example 1 exemplifies a solution comprising poly(methyl methacrylate) as an organic binder, a photopolymerization monomer, and a photoinitiator coating onto a 50 micron thick

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polypropylene film and dried to form a photopolymerizable layer having a dry thickness of 10 microns. The said layer was then laminated onto a 20 micron-thick polymethyl methacrylate support film. The polypropylene film was then stripped and the said layer was laminated to a treated copper-clad epoxy resin fiberglass substrate. The formed element was then exposed to actinic rays and developed to form a negative image. An etching process was then preformed to remove the copper at the areas unprotected by the resist image (c. 16, 1.30-c. 17, 1.17). While Taguchi is silent on fish eyes, it clearly teaches the use of a polypropylene protective film,

Mannion discloses a process for incorporating a clarifying agent into a semi-crystalline resin is provided whereby a clarifying agent is in the form of a powder of a mean particle size of 15 microns or less, is blended with the polyolefin resin, at a temperature above 170 degrees C. until the clarifying agent is dissolved in the molten resin. The use of clarifying agents to reduce the haze in articles manufactured from crystalline polyolefin resins, specifically polypropylene, is well known in the art. Representative acetals of sorbitol and xylitol, which have been employed as clarifying agents. One approach used to eliminate bubbles or "fish eyes" is with sorbitol acetal clarified polyolefins. This method involves using a distribution of di-acetals of sorbitol made from a mixture of benzaldehyde and di- or tri-methyl substituted benzaldehyde. The composition has a relatively low melting point, but still must be compounded above its melting point to avoid bubbles. Also, the composition has relatively poor clarifying properties compared to di-acetals of sorbitol made entirely from alkyl substituted benzaldehydes. The polyolefin polymers of the present invention may include aliphatic polyolefins and copolymers made from at least one aliphatic olefin and one or more ethylenically unsaturated comonomers. Generally, the comonomers, if present, will be provided in a minor amount, e.g., about 10% or

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less or even about 5% or less, based upon the weight of the polyolefin. Such comonomers may serve to assist in clarity improvement of the polyolefin, or they may function to include other properties of the polymer. Examples include acrylic acid, methacrylic acid, and esters of the same, vinyl acetate, etc. Examples of olefin polymers whose transparency can be improved conveniently according to the present invention are polymers and copolymers of aliphatic mono-olefins containing from 2 to about 6 carbon atoms, which have an average molecular weight of from about 10,000 to about 2,000,000, preferably from about 30,000 to about 300,000, such as polyethylene, linear low density polyethylene, polypropylene, crystalline ethylene/propylene copolymer (random or block), poly(1-butene) and polymethylpentene. The polyolefins of the present invention may be described as semi-crystalline, basically linear, regular polymers which may optionally contain side chains, such as are found in conventional low density polyethylene. Other polymers which may benefit from the reduced particle sized clarifying agents of the present invention include polyethylene terephthalate, glycol modified polyethylene terphthalate, polybutylene terephthalate, and polyamides. The process of the present invention is particularly adapted for commercial compounding of a clarifying agent and polyolefin resin. The term "compounding" is used broadly to describe the process of dispersing clarifying agent throughout a resin while the resin is in a molten state, i.e. heated to above its melting point. Often, the base resin, which has the appearance of a fluffy particulate, is dry blended with the desired additives including clarifying agents and extruded by the resin manufacturer. The resin is usually extruded a second time immediately before being processed into finished articles by, for example, injection molding, extrusion blow molding, injection blow molding, stretch blow molding, compression molding, rotational molding, profile extrusion, sheet extrusion, thermal forming,

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film extrusion, and film extrusion with orientation. Regardless of how many times the mixture of resin and clarifying agent is extruded or otherwise blended while in a molten state, it is important that prior to forming the composition into an article, that the clarifying agent be dissolved in the resin melt. In many cases, dissolution will be accomplished by the clarifying agent melting and being distributed throughout the molten resin. However, an advantage of the present process is that the clarifying agent may dissolve in the molten resin without even approaching the melting point of the clarifying agent.

The reference specifically mentions that bubbles/n fish eyes are “eliminated”, thus the addition of the compounds to the polymers results in a number of fish eyes meeting the instant claim limitations (zero).

Given the teachings of the references, it would have been obvious to one of ordinary skill in the art to prepare the protective film of Taguchi choosing to add the clarifying agents of Mannion to achieve higher transparency and better coating properties by “eliminating” bubbles/fish eyes, with reasonable expectation of achieving a material capable of forming a durable image.

Additionally, with respect to the newly added claims 44-46 which require that the resin of the layer be filtered after thermal melting, this is a product by process limitation, therefore the layer simply has to be made of a resin.

Claims 12 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taguchi in view of Mannion and further in view of Hoffmann (US 4,710,446).

Taguchi and Mannion have been discussed above teaches all the limitations of the instant claims except the specific initiators set forth in instant claims 12 and 27. Taguchi does however

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teach that the photopolymerizable layer comprises a photopolymerization initiator wherein the kind of initiator to be used is not particularly critical and any known photopolymerization initiator can be used (c. 6, 1. 42-45). It is the examiner's position that 2,4,5-triarylimidazole dimer is a well-known and conventional photoinitiator. This position is supported by the teachings of Hoffmann which teach that photoinitiator systems conventionally used for resist layer include benzophenone, 2,4,5- triarylimidazole dimmers and mixtures thereof (c. 6, 1. 9-27).

Claims 42 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Taguchi in view of Mannion and further in view of Takahashi et al (5,589,306).

Taguchi and Mannion have been discussed above teaches all the limitations of the instant claims except the specific initiators set forth in instant claims 42 and 43. Tagushi discloses a variety of di (meth)acrylates and is not limited thereto, but fails to teach the specifically claimed compound.

Takahashi et al discloses a variety of diacrylates suitable for use in photoresists. Included among them are ethoxylate bisphenol A diacrylates.

Given the teachings of the references, it would have been obvious to one of ordinary skill in the art to prepare the material of the Taguchi in view of Mannion choosing to employ the diacrylate of Takahashi with reasonable expectation of achieving a material capable of forming a durable image.

(10) Response to Argument

Appellant has argued that the references fail to teach a layer having the stated number of fish eyes, or that it recognizes fish eyes as a problem. As stated above, the method of measuring is not given weight as the claims as drawn to a material, not a method, and that regardless of the

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method of evaluating, the area of the layer would possess the same number of fish eyes as they are a part of the material. Again, the combination of references aims to “eliminate” the fish eyes entirely, thus the number of fish eyes would fall within the instant claim limitations. While the reference is silent with respect to the presence of fish eyes being a problem, one of ordinary skill in the art would desire a defect-free layer when preparing such a layer. Additionally, as stated by the MPEP, the prima facie case of obviousness is not undermined simply because applicant’s motivation for preparing the material differs from that of the prior art’s motivation. In re Dillon, 919 F.2d 688, 692-93, 16 USPQ2d 1897, 1901 (Fed. Cir. 1990) (in banc), cert. Denied, 500 U.S. 904 (1991).

Therefore, the lack of a teaching of what the fish eye population should or would be in and of itself does not overcome the rejection.

Additionally, appellant has argued that the reference fails to specifically teach the presence of the protective layer as it is an “optional” feature. While it is an “optional” feature, as admitted by applicant on page 3, section 7 of the declaration, the examples of Taguchi do employ a polyethylene protective layer. Also, the reference teaches the equivalence between the polyethylene and polypropylene film as admitted by applicant on page 3, section 6, of the declaration, thus, a polypropylene film is specifically contemplated.

Additionally, appellant has argued that the Mannion reference does not actually teach eliminating “fish eyes”. The Mannion reference clearly teaches eliminating “fish eyes” as its taught third approach, and while it does not address the size, the use of the phrase *eliminating* “fish eyes” is taken to mean just that. The reference clearly teaches in column 2, lines 36-47, that one focus of the invention of the reference is to use the compounds to “*eliminate bubbles or “fish*

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eyes” and that these defects may be avoided by employing the sorbitol compounds in the polyolefin resin and heating the resin to a high temperature. Therefore, the reference does clearly seek to *eliminate* these defects, meaning that its goal is to prepare a polyolefin film having *zero* fish eyes, which would be beneficial to any polyolefin film such as polypropylene. Additionally, the reference is directed to various polyolefin films, and while the reference does mention injection moldings, it is not directed solely to those product made by the polyolefins, but rather the reference is drawn to solving a problem for any type of polyolefin films, which includes those used as photosensitive films.

Appellant has argued that the examiner is incorrect in stating that the requirement of measuring the film under a microscope does not further define the claimed material. The protecting film (C) would contain the same number of fish eyes at the given diameter no matter how it is evaluated. The examiner notes that the instant claims are product claims, and that the fish eyes would be present in the material regardless of the method of evaluation, thus, the examiner maintains the position that this does not further limit the claim.

Appellant has also argued that the Taguchi et al reference teaches that the protective film is an optional feature of its invention. While Taguchi states that the film *may* be added, it is clearly a preferred addition to the photographic element (employed in example 3).

With respect to the instant claims 44-46 which recite that the film “is made of resin filtered after thermal melting”, these claims are drawn to a “photosensitive film”, not a method of making a photosensitive film, therefore all that is required is a photosensitive film meeting the instantly claimed properties, regardless of how it was formed. The film of the reference appears to meet the limitations, and therefore the claims are properly rejected. From the MPEP:

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M.P.E.P. § 2113:

“Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985)... “The Patent Office bears a lesser burden proof in making out a case of *prima facie* obviousness for product-by-process claims because of their peculiar nature” than when a product is claimed in the conventional fashion. *In re Fessman*, 180 USPQ 324, 326 (CCPA 1974). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289, 292 (Fed. Cir. 1983).

With respect to the additional rejections, as they are based upon the Taguchi in view of Mannion rejection, Appellant has argues that these rejections are not sustainable for the same reasons as addressed above, these rejections are also maintained by the examiner.

The examiner has presented a clear and reasonable position as to why one of ordinary skill in the art would have chosen to add the clarifying agents of Mannion to the polyolefin protecting film of Taguchi to *eliminate* major defects known as bubbles or “fish eyes” which affect the strength of the materials. This addition of the additives of the Mannion reference provides motivation to employ its additives in the protective film of Taguchi to yield the predictable result of eliminating these major defects.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner’s answer.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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